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     (FILE 'HOME' ENTERED AT 09:55:46 ON 29 DEC 2003)

     INDEX 'ADISCTI, ADISINSIGHT, ADISNEWS, AGRICOLA, ANABSTR, AQUASCI,
     BIOBUSINESS, BIOCOMMERCE, BIOSIS, BIOTECHABS, BIOTECHDS, BIOTECHNO, CABA,
     CANCERLIT, CAPLUS, CEABA-VTB, CEN, CIN, CONFSCI, CROPB, CROPU, DISSABS,
     DDFB, DDFU, DGENE, DRUGB, DRUGMONOG2, ...' ENTERED AT 09:56:14 ON 29 DEC
     2003
               SEA EPIMERASE AND REDUCTASE
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                8   FILE AGRICOLA
                1   FILE ANABSTR
                3   FILE AQUASCI
                2   FILE BIOBUSINESS
               96   FILE BIOSIS
               21   FILE BIOTECHABS
               21   FILE BIOTECHDS
               52   FILE BIOTECHNO
               12   FILE CABA
                3   FILE CANCERLIT
              218   FILE CAPLUS
                2   FILE CEABA-VTB
               12   FILE DISSABS
                2   FILE DDFU
              171   FILE DGENE
                2   FILE DRUGU
                1   FILE EMBAL
               59   FILE EMBASE
               44   FILE ESBIOBASE
                1   FILE FEDRIP
                3   FILE FSTA
              662   FILE GENBANK
               29   FILE IFIPAT
                2   FILE JICST-EPLUS
               34   FILE LIFESCI
              104   FILE MEDLINE
                1   FILE OCEAN
               12   FILE PASCAL
                2   FILE PROMT
               97   FILE SCISEARCH
               47   FILE TOXCENTER
              270   FILE USPATFULL
                9   FILE USPAT2
               27   FILE WPIDS
               27   FILE WPINDEX
L1               QUE EPIMERASE AND REDUCTASE
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     FILE 'USPATFULL, CAPLUS, MEDLINE, SCISEARCH, BIOSIS, EMBASE, BIOTECHNO,
     TOXCENTER, ESBIOBASE, LIFESCI, IFIPAT' ENTERED AT 09:57:24 ON 29 DEC 2003
L2            88 S L1 AND (BI-FUNCTION? OR BIFUNCTIO?)
L3            72 S L2 AND (ISOLAT? OR PURIF? OR CHARACT?)
L4            60 DUP REM L3 (12 DUPLICATES REMOVED)
L5             5 S L4 AND (GDP-4-KETO-6-DEOXY-D-MANNOSE)
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L5 ANSWER 1 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2002:272847 USPATFULL
TITLE: Glycoconjugate and sugar nucleotide synthesis using solid supports
INVENTOR(S): Wang, Peng G., Troy, MI, UNITED STATES
Chen, Xi, Norristown, PA, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2002150968	A1	20021017	
APPLICATION INFO.:	US 2001-757846	A1	20010110	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: Brinks Hofer Gilson & Lione, P.O. Box 10395, Chicago, IL, 60610
NUMBER OF CLAIMS: 43
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 22 Drawing Page(s)
LINE COUNT: 2405
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to methods and compositions for the in vitro production of glycoconjugates. In particular, a preferred production system is provided that comprises a solid support, at least one sugar nucleotide producing enzyme, at least one glycosyltransferase, at least one bioenergetic, and at least one acceptor. The sugar nucleotide producing enzyme(s) is preferably immobilized on the solid support. The glycosyltransferase may be co-immobilized on the solid support with the sugar nucleotide producing enzyme(s), or may be provided to the solid support in solution.

L5 ANSWER 2 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2002:243134 USPATFULL
TITLE: Glycoconjugate synthesis using a pathway-engineered organism
INVENTOR(S): Wang, Peng George, Troy, MI, UNITED STATES
Chen, Xi, Norristown, PA, UNITED STATES
Liu, Ziye, Detroit, MI, UNITED STATES
Zhang, Wei, Detroit, MI, UNITED STATES

	NUMBER	KIND	DATE	
PATENT INFORMATION:	US 2002132320	A1	20020919	
APPLICATION INFO.:	US 2001-758525	A1	20010110	(9)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: BRINKS HOFER GILSON & LIONE, P.O. BOX 10395, CHICAGO, IL, 60610
NUMBER OF CLAIMS: 51
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 22 Drawing Page(s)
LINE COUNT: 2558
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This invention relates to methods and compositions for the production of glycoconjugates. In particular, organisms are provided with at least one heterologous gene encoding an enzyme for regenerating a sugar nucleotide along with at least one glycosyltransterase. Such organisms are useful for the large-scale synthesis of glycoconjugates.

L5 ANSWER 3 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2002:112578 USPATFULL
TITLE: Use of recombinant enzymes for preparing GDP-L-fucose and fucosylated glycans
INVENTOR(S): Renkonen, Risto, Espoo, FINLAND

Mattila, Pirkko, Espoo, FINLAND
Hirvas, Laura, Helsinki, FINLAND
Hortling, Solveing, Helsinki, FINLAND
Kallioinen, Tuula, Vantaa, FINLAND
Kauranen, Sirkka-Liisa, Espoo, FINLAND
Jarvinen, Nina, Saukkola, FINLAND
Maki, Minna, Helsinki, FINLAND
Niittymaki, Jaana, Espoo, FINLAND
Rabina, Jarkko, Helsinki, FINLAND

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002058313	A1	20020516
APPLICATION INFO.:	US 2001-962805	A1	20010926 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	FI 2000-2114	20000926

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: CROWELL & MORING LLP, INTELLECTUAL PROPERTY GROUP, P.O. BOX 14300, WASHINGTON, DC, 20044-4300
NUMBER OF CLAIMS: 44
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 2 Drawing Page(s)
LINE COUNT: 1818
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Use of recombinant enzymes for the preparation of GDP-L-fucose and fucosylated glycans is disclosed. GDP-L-fucose functions as a fucose donor in the biosynthetic route leading to the fucosylated glycans, which have therapeutic utility. A process for preparing GDP-L-fucose and fucosylated glycans, and means useful in the process are provided. Said means include enzymes, chimeric enzymes, DNA sequences, genes, vectors and host cells. An assay for the determination of GDP-fucose and fucosyltransferase, and a test kit therefore are also provided.

L5 ANSWER 4 OF 5 USPATFULL on STN
ACCESSION NUMBER: 2002:22144 USPATFULL
TITLE: VITAMIN C PRODUCTION IN MICROORGANISMS AND PLANTS
INVENTOR(S): BERRY, ALAN, BLOOMFIELD, NJ, UNITED STATES
RUNNING, JEFFREY A., MANITOWOC, WI, UNITED STATES
SEVERSON, DAVID K., TWO RIVERS, WI, UNITED STATES
BURLINGGAME, RICHARD P., MANITOWOC, WI, UNITED STATES

	NUMBER	KIND	DATE
PATENT INFORMATION:	US 2002012979	A1	20020131
APPLICATION INFO.:	US 1999-318271	A1	19990525 (9)

	NUMBER	DATE
PRIORITY INFORMATION:	US 1998-88549P	19980608 (60)
	US 1999-125073P	19990317 (60)
	US 1999-125054P	19990318 (60)

DOCUMENT TYPE: Utility
FILE SEGMENT: APPLICATION
LEGAL REPRESENTATIVE: SHERIDAN ROSS PC, 1560 BROADWAY, SUITE 1200, DENVER, CO, 80202
NUMBER OF CLAIMS: 72
EXEMPLARY CLAIM: 1
NUMBER OF DRAWINGS: 12 Drawing Page(s)
LINE COUNT: 8483
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB A biosynthetic method for producing vitamin C (ascorbic acid, L-ascorbic

acid, or AA) is disclosed. Such a method includes fermentation of a genetically modified microorganism or plant to produce L-ascorbic acid. In particular, the present invention relates to the use of microorganisms and plants having at least one genetic modification to increase the action of an enzyme involved in the ascorbic acid biosynthetic pathway. Included is the use of nucleotide sequences encoding **epimerases**, including the endogenous GDP-D-mannose:GDP-L-galactose **epimerase** from the L-ascorbic acid pathway and homologues thereof for the purposes of improving the biosynthetic production of ascorbic acid. The present invention also relates to genetically modified microorganisms, such as strains of microalgae, bacteria and yeast useful for producing L-ascorbic acid, and to genetically modified plants, useful for producing consumable plant food products.

L5 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2003 ACS on STN
ACCESSION NUMBER: 2000:704879 CAPLUS
DOCUMENT NUMBER: 134:67994
TITLE: Probing the Catalytic Mechanism of **GDP-4-keto-6-deoxy-D-mannose Epimerase/Reductase** by Kinetic and Crystallographic **Characterization** of Site-specific Mutants
AUTHOR(S): Rosano, Camillo; Bisso, Angela; Izzo, Gaetano; Tonetti, Michela; Sturla, Laura; De Flora, Antonio; Bolognesi, Martino
CORPORATE SOURCE: Department of Physics and Advanced Biotechnology Center-IST, INFM, University of Genova, Genoa, I-16132, Italy
SOURCE: Journal of Molecular Biology (2000), 303(1), 77-91
CODEN: JMOBAK; ISSN: 0022-2836 (13 Oct 2000)
PUBLISHER: Academic Press
DOCUMENT TYPE: Journal
LANGUAGE: English
AB **GDP-4-keto-6-deoxy-D-mannose epimerase/reductase** is a **bifunctional** enzyme responsible for the last step in the biosynthesis of GDP-L-fucose, the substrate of fucosyl transferases. Several cell-surface antigens, including the leukocyte Lewis system and cell-surface antigens in pathogenic bacteria, depend on the availability of GDP-L-fucose for their expression. Therefore, the enzyme is a potential target for therapy in pathol. states depending on selectin-mediated cell-to-cell interactions. Previous crystallog. investigations have shown that **GDP-4-keto-6-deoxy-D-mannose epimerase/reductase** belongs to the short-chain dehydrogenase/**reductase** protein homol. family. The enzyme active-site region is at the interface of an N-terminal NADPH-binding domain and a C-terminal domain, held to bind the substrate. The design, expression and functional **characterization** of seven site-specific mutant forms of **GDP-4-keto-6-deoxy-D-mannose epimerase/reductase** are reported here. In parallel, the crystal structures of the native holoenzyme and of three mutants (Ser107Ala, Tyr136Glu and Lys140Arg) have been investigated and refined at 1.45-1.60 .ANG. resoln., based on synchrotron data (R-factors range between 12.6 % and 13.9 %). The refined protein models show that besides the active-site residues Ser107, Tyr136 and Lys140, whose mutations impair the overall enzymic activity and may affect the coenzyme binding mode, side-chains capable of proton exchange, located around the expected substrate (**GDP-4-keto-6-deoxy-D-mannose**) binding pocket, are selectively required during the epimerization and redn. steps. Among these, Cys109 and His179 may play a primary role in proton exchange between the enzyme and the epimerization catalytic

intermediates. Finally, the addnl. role of mutated active-site residues involved in substrate recognition and in enzyme stability has been analyzed. (c) 2000 Academic Press.

REFERENCE COUNT: 55 THERE ARE 55 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT